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PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-125169

(43)Date of publication of application : 26.04.2002

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(51)Int.Cl. H04N 5/445
H04B 1/16
H04H 1/00
H04N 7/025
H04N 7/03
H04N 7/035

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(54) PROGRAM GUIDE DEVICE AND PROGRAM GUIDE METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a program guide device and its method that can display many program cells on one screen and allow a user to quickly recognize a range where programs of its preferred genre are concentrated.

SOLUTION: The program guide device generates a program guide where program cells are arranged two-dimensionally on the basis of display priority set corresponding to program genres, a display form set corresponding to the genres and program information. Thus, the user can identify the program genres in the program guide

depending on the display form of the program cells. Furthermore, since the user can view program cells in the display form depending on the genre in the program guide, the user can quickly recognize a range where programs of its preferred genre are concentrated.

CLAIMS

[Claim(s)]
[Claim 1]A program guide device comprising:
A means to memorize program information containing a genre of a program.
A means to set up a display priority of a program cell corresponding to said genre.
A means to set up a display style of a program cell corresponding to said genre.
A means to generate a race card which arranged two or more program cells to two dimensions based on said display priority, said display style, and said program

information.

[Claim 2]The program guide device comprising according to claim 1:
A means to display said generated race card on a two-dimensional screen.
A means to receive selection of a program cell arranged in said displayed race card, and a means to generate an information-display screen in a display style relevant to said selected display style of a program cell, and to display predetermined information about said selected program cell in the information-display screen concerned.

[Claim 3]The program guide device according to claim 2, wherein program information corresponding to said program cell is included in said predetermined information.
[Claim 4]The program guide device comprising according to any one of claims 1 to 3:
A means to display said generated race card on a two-dimensional screen.
A means to display information based on a predetermined attribute about a program corresponding to a means to receive specification of a certain area containing at least one or more program cells on said displayed race card, and a program cell contained in said specified certain area.

[Claim 5]The program guide device comprising according to any one of claims 1 to 4:
A means to display said generated race card on a two-dimensional screen.
A means to take statistics of a program which has a predetermined program attribute among programs corresponding to a means to receive specification of a certain area containing at least one or more program cells on said displayed race card, and a program cell contained in said specified certain area.

[Claim 6]The program guide device according to claim 5 displaying a result by which said statistics were taken on said race card.
[Claim 7]The program guide device comprising according to any one of claims 1 to 6:
A means to display said generated race card on a two-dimensional screen.
A search means which a certain area where a predetermined program attribute fulfills a predetermined condition is searched, and shows that it is the searched certain area concerned in said race card.

[Claim 8]Have a means to receive specification of movement of said certain area, and said search means, The program guide device according to claim 7, wherein a predetermined program attribute except a certain area searched in the past whenever

it received specification of said certain area searches a certain area which fulfills a predetermined condition and shows the certain area concerned.
[Claim 9]Said display priority is a program guide device for any of claims 1 thru/or 8 setting up automatically their being based on a predetermined history by a user.
[Claim 10]Said display priority is a program guide device for any of claims 1 thru/or 9 being set up by user their being.
[Claim 11]It is a program guide device for any of claims 1 thru/or 10, wherein shape of a program cell, a pattern, colors, or those combination are included in said display style their being.
[Claim 12]A kind of said genre is a program guide device for any of claims 1 thru/or 11, wherein more than one exist and a display priority of a program cell corresponding to a genre of ******** and a display style are set up their being.
[Claim 13]A program guide method comprising:
A process of memorizing program information containing a genre of a program.
A process of setting up a display priority of a program cell corresponding to said genre.
A process of setting up a display style of a program cell corresponding to said genre.
A process of generating a race card which arranged two or more program cells to two dimensions based on said display priority, said display style, and said program information.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to an electronic program guide (EPG:Electronic Program Guide).

[0002]

[Description of the Prior Art]In recent years, the digitized television signal is transmitted via artificial satellites, such as a broadcasting satellite and a communications satellite, and the digital broadcast system which receives this at each home, and views and listens to a TV program is employed. In this kind of system, since many channels are securable, many programs can be broadcast dramatically.

[0003]In such a system, the information about the electronic program guide (it calls the following "EPG".) which shows the contents of broadcast of many programs is transmitted to the receiver of each home from a satellite with the video audio information of a program. At each home, a user operates a receiver and displays this EPG on a TV display. A user tunes in in search of a program to watch on EPG displayed on the TV display, it can view and listen, and can record or can perform viewing-and-listening request to print out files of a program, and reservation of picture recording.

[0004]

[Problem(s) to be Solved by the Invention]However, the program sponsored by EPG exceeds 100, and although it is very a large number, the number of program cells of the program which can be displayed on one EPG display screen is restricted.

[0005]Therefore, it was difficult to grasp promptly the channel and time zone which cannot see the wide range of EPG at once, but the program of the genre of liking [a user] concentrates.

[0006]This invention is made in view of the above point, and is a thing.

The purpose is to provide the program guide device and method of knowing promptly the range which can be made to display many program cells by a 1 screen top, and the program of the genre of liking [a user] concentrates.

[0007]
[Means for Solving the Problem]In order to solve an aforementioned problem, the invention according to claim 1, A means to memorize program information containing a genre of a program, and a means to set up a display priority of a program cell corresponding to said genre, It constitutes so that it may have a means to set up a display style of a program cell corresponding to said genre, and a means to generate a race card which arranged two or more program cells to two dimensions based on said display priority, said display style, and said program information.
[0008]According to the invention constituted in this way, based on a display priority set up corresponding to a genre of a program, a display style set up corresponding to the genre concerned, and program information, a race card which arranged two or more program cells to two dimensions is generated. Therefore, the user can identify a genre of a program in a race card according to a display style of a program cell. In a race card, since the user can see a program cell by a display style according to a genre, he can know promptly a range which a program of a favorite genre concentrates. Since a display priority according to a genre can be set up, rank attachment of a genre which a user wants to display on a race card can be performed, and a program cell can be displayed on a race card based on the rank attachment. Therefore, a race card peculiar to a user is generable.
[0009]Since the race card concerned identifies a genre according to a display style of a program cell, it does not need to display many text in a program cell like before. Therefore, many program cells can be displayed by a 1 screen top.
[0010]In the program guide device according to claim 1 the invention according to claim 2, A means to display said generated race card on a two-dimensional screen, and a means to receive selection of a program cell arranged in said displayed race card, An information-display screen is generated in a display style relevant to a display style of said selected program cell, and it constitutes so that it may have a means to display predetermined information about said selected program cell in the information-display screen concerned.
[0011]In the program guide device according to claim 2, to said predetermined information, an invention indicated to claim 3 is constituted so that program information corresponding to said program cell may be included. Therefore, program information which cannot be checked in a user and a program cell can be checked on an information-display screen corresponding to the program cell.
[0012]In the program guide device according to any one of claims 1 to 3, an invention indicated to claim 4 on a means to display said generated race card on a

two-dimensional screen, and said displayed race card, It constitutes so that it may have a means to display information based on a predetermined attribute about a program corresponding to a means to receive specification of a certain area containing at least one or more program cells, and a program cell contained in said specified certain area. Therefore, the user can check easily information based on a predetermined attribute about a program on a race card.

[0013]In the program guide device according to any one of claims 1 to 4, the invention according to claim 5 on a means to display said generated race card on a two-dimensional screen, and said displayed race card, It constitutes so that it may have a means to take statistics of a program which has a predetermined program attribute among programs corresponding to a means to receive specification of a certain area containing at least one or more program cells, and a program cell contained in said specified certain area. Therefore, statistics of a program which has a predetermined program attribute among programs included in a certain area specified by user, for example, a program on which the person talent's OO appears, can be taken.

[0014]In the program guide device according to claim 5, the invention according to claim 6 is constituted so that a result by which said statistics were taken may be displayed on said race card. Therefore, the user can check statistic results.

[0015]In the program guide device according to any one of claims 1 to 6 the invention according to claim 7, It constitutes so that it may have a means to display said generated race card on a two-dimensional screen, and a search means which a certain area where a predetermined program attribute fulfills a predetermined condition is searched in said race card, and shows that it is the searched certain area concerned. Therefore, the user can search a field which has five or more programs of search of a certain area where a predetermined program attribute fulfills a predetermined condition, for example, a program which a user registered as a favorite.

[0016]The invention according to claim 8 is provided with a means to receive specification of movement of said certain area, in the program guide device according to claim 7, and said search means, A predetermined program attribute except a certain area searched in the past whenever it received specification of said certain area searches a certain area which fulfills a predetermined condition, and it constitutes so that the certain area concerned may be shown. Therefore, the user can search one field after another where a predetermined program attribute fulfills a predetermined condition, and can check it.

[0017]Based on a predetermined history by a user, the invention according to claim 9

constitutes [in / for any of claims 1 thru/or 8 their being / a program guide device] said display priority so that it may be set up automatically. Therefore, time and effort to which a user sets a display priority can be reduced.

[0018]The invention according to claim 10 constitutes [in / for any of claims 1 thru/or 9 their being / a program guide device] said display priority so that it may be set up by user. Therefore, the user can set up a display priority like.

[0019]In said display style, the invention according to claim 11 is constituted [in / for any of claims 1 thru/or 10 their being / a program guide device] so that shape of a program cell, a pattern, colors, or those combination may be included.

[0020]Two or more inventions according to claim 12 exist, and they constitute [in / for any of claims 1 thru/or 11 their being / a program guide device] a kind of said genre so that a display priority of a program cell corresponding to a genre of ******** and a display style may be set up.

[0021]A process the invention according to claim 13 remembers program information containing a genre of a program to be, A process of setting up a display priority of a program cell corresponding to said genre, and a process of setting up a display style of a program cell corresponding to said genre, It constitutes so that it may have a process of generating a race card which arranged two or more program cells to two dimensions, based on said display priority, said display style, and said program information. Therefore, the invention according to claim 1 and same effect can be acquired.

[0022]

[Embodiment of the Invention]Hereafter, the suitable embodiment of this invention is described with reference to drawings.

[0023]The composition of the satellite digital broadcast receiver concerning the embodiment of this invention is shown in drawing 1. The satellite digital broadcast receiver 1 shown in drawing 1 is arranged at a televiewer's home, receives the digital broadcast signal (broadcast wave) from a satellite, and displays a television (TV) program on the screen of a domestic television (TV) receiver. The information about the electronic program guide (EPG) simultaneously sent from a satellite is received, and it has a function displayed on the screen of television according to a televiewer's directions.

[0024]As shown in drawing 1, the receiver 1 has the composition in which various elements were connected to the bus 2. It is operational by the attached remote control 12 in the receiver 1.

[0025]It is received by the antenna 3 and the broadcast wave (BS-RF signal)

transmitted from the satellite is sent to the tuner 4 in the receiver 1. The information (SI (Service Information)) used for everything but the video audio information (it is hereafter called "TV program information".) of TV program for the display of EPG is included in this broadcast wave. The tuner 4 changes into IF (intermediate frequency) signal the signal wave which aligned with the receiving band which the user chose and received, and sends it to the recovery treating part 5. The recovery treating part 5 restores to the inputted digital signal, performs required processing of reconstruction of a data frame, an error correction, etc., and via the descrambler 20, Data is supplied to the demultiplexer 6 in the transport stream (TS:TransportStream) form of MPEG 2.

[0026]The demultiplexer 6 extracts the voice data and picture image data of service which were specified from TS of inputted MPEG 2, and supplies them to the audio decoder 10 and the video decoder 8, respectively. Here, voice data is MPEG 2-AAC form and picture image data is MPEG 2-Video form. The audio decoder 10 decodes the inputted voice data, generates program audio data, and supplies this to the voice processing part 11. Including amplifier, the voice processing part 11 performs predetermined speech signal processing, generates voice response, and outputs it to the loudspeaker 23.

[0027]On the other hand, the video decoder 8 decodes picture image data, generates a program video data, and supplies this to the display processor 9. The display processor 9 performs predetermined processing to the inputted program video data, generates a video output, and outputs it to the display 22. The display processor 9 has a function which text etc. are made to superimpose on the program image displayed on the display 22. The data for EPG displays described later is superimposed by this display processor 9 on a program video data, or is replaced with a program video data, is outputted, and is displayed on the display 22.

[0028]Here, the mass recorder 24 (for example, VTR devices 24a) receives some of all TS data or TS data outputted from the audio signal outputted from the voice processing part 11, the video signal outputted from the display processor 9, and the demultiplexer 6, and records it on a recording medium.

[0029]The demultiplexer 6 extracts the data (data other than TV program information) containing SI from TS of inputted MPEG 2. SI is information which becomes the origin of the data for EPG displays, and EPG display processing is performed using this SI. The data of these SI which the demultiplexer 6 extracted is memorized by RAM16. Non-volatile RAM is used for RAM16.

[0030]When the flash memory 14 performed an EPG display, it memorized required various graphical data (predetermined marks, such as a frame of a race card, and a

logo mark of a broadcast channel etc.), and ROM15 has memorized the font data etc. which are used as text data for EPG.

[0031]The limited reception treating part 7 performs the following processings. Limited broadcast (ConditionalAccess) of a prior contract type is performed per a service unit or program, and TS of the target MPEG 2 is enciphered and transmitted. The limited reception treating part 7 comprises IC card 21 by which contract information was indicated to be a decryption treating part (descrambler 20). This IC card 21 is distributed to each receiver user from the service center of broadcasting organization joint management. The conditions of contract which show the viewing-and-listening propriety of a program are contained in the contract information of the user and broadcasting organization who were indicated on this card, and, generally those contents differ for every user. These conditions of contract decide on the moon, the channel to which it can view and listen per year, and the program to which it can be viewed and listened, for example. Using the both sides of decryption pertinent information by which the limited reception treating part 7 is got from conditions of contract and a broadcast wave when a limited program is chosen, when the user has contracted, TS of MPEG 2 is deciphered, and the user can view and listen to this program. On the other hand, in not contracting, decryption of TS of MPEG 2 is not performed, and the user cannot view and listen to this limited program. In this case, the program viewing-and-listening improper information memorized by ROM15 etc. is displayed on an EPG display screen.

[0032]In the case of a pay-per-view (Pay Per View) program, whenever a user purchases a program, a purchase situation is indicated to IC card 21, and pay-per-view program purchase information is transmitted via the modem 18 and the public line 19 to the broadcast distribution entrepreneur side from a receiver end for every fixed time.

[0033]Via the interface 13, the directions which the user inputted using the remote control 12 are sent to CPU17, and are recognized. CPU17 controls each element in the receiver 1 according to a user's directions. For example, the directions for aligning with the frequency of the channel specified by a user are sent to the tuner 4.

[0034]In the case of the display of EPG, CPU17 creates EPG text data with reference to SI etc. which are memorized by RAM16. Next, the data for EPG displays is created using graphical data, such as frame data etc. of the race card memorized in the flash memory 14, the font data in ROM15, and EPG text data, and the display processor 9 is supplied. Based on the change directions from CPU17, the display processor 9 switches the program video data and the data for EPG displays from the video

decoder 8, or superimposes the data for EPG displays on program data, and outputs it to the display 22 as a video signal.

[0035]The public line 19 is connected to the bus 2 via the modem 18, it connects with the telephone of a user's house, a personal computer, etc., and required communication between a broadcasting station and a televiewer home is performed.

[0036]By the above composition, the receiver 1 has a function as a program guide device concerning this invention.

[0037]Next, the digital signal transmitted from a satellite as data which becomes the origin of EPG display data is explained. The data format of a digital signal is roughly shown in drawing 2. Like a graphic display, with a satellite digital broadcast system, two or more BS channels (zone) are set up, and TS of a maximum of eight MPEG 2 can be transmitted for every BS channel. It is possible to transmit service of a maximum of 32 by one TS. In the following explanation, the frequency band in satellite broadcasting is called "BS channel", and it distinguishes from the channel of each program which the receiver 1 receives.

[0038]Into each TS, multiplex [of the all station SI] is carried out into information, including an image, a sound, etc. All station SI is SI for all the broadcasting stations, and the program arrangement information of the part of all the channels is included. That is, multiplex [of the all station SI of the same contents] is carried out to all the TS of all the BS channels, and it is transmitted to it. Thereby, the televiewer can create the EPG data for all the channels by acquiring all station SI contained in TS of the channel, when having received every channel of which broadcasting station. CPU17 shown in drawing 1 will control the demultiplexer 6, will acquire all station SI from TS under present reception, and, specifically, will create EPG text data based on this.

[0039]The form of the image and voice data in each TS is shown in the lower part of drawing 2. Although it described that a maximum of 32 services per TS are ability ready for sending as the point, Time Division Multiplexing of the service of these plurality is carried out with the gestalt of the packet into one TS. In the example shown in drawing 2, Time Division Multiplexing of the service (the services A and B, ..) of two or more broadcasting stations is carried out to TS located in the bottom. Therefore, in order to receive the service A, for example, CPU17 aligns the tuner 4 of drawing 1 with BS channel which contains the TS first. Next, it is necessary for the recovery treating part 5 of drawing 1 to specify and extract target TS from two or more TS contained in the BS channel, and to extract the service A in which Time Division Multiplexing is further carried out by the demultiplexer 6 into the TS with

reference to the identification information.

[0040]Here, as shown in drawing 2, each office SI about the service is inserted in the data (the services A and B and .. show) of each service station. Drawing 2 shows the example inserted in the head of the data of each service station for convenience. Although each office SI is the same information as all station SI, it includes the information peculiar to each office which is not included in all station SI. That is, each office SI includes the detailed information for example, on each program, etc. including information required for all station SI to display the race card about all the channels as EPG. Therefore, CPU17 of drawing 1 can display the detailed information about a specific program by acquiring each office SI according to a user's directions.

[0041]Next, information, including SI etc. which were memorized by RAM16 referred to by CPU17 in the case of the display of EPG, is explained in detail. Drawing 3 shows the example of information included in SI memorized by RAM16. As shown in drawing 3, the information on a genre besides information, including the channel number of each program, a date, start time, finish time, etc., is included in SI. A maximum of three main genres are set to one program. For example, in the case of a program like sports news, two main genres of "news" are set to a "sport" like the program 3 shown in drawing 3. A maximum of three subgenres are set to one main genre, and a maximum of nine subgenres are set to setting out, i.e., one program. For example, in the program 3 shown in drawing 3, three subgenres, "baseball", "soccer", and "tennis", are set as the main genre. Setting out of such a genre is beforehand performed by the broadcasting station side.

[0042]RAM16 memorizes the program cell display management table which manages the information about the display priority of the program cell set up for every genre of a program, and the display style of the program cell set up for every genre of a program. Drawing 4 shows the example of information managed with the program cell display management table 25. Here, a display priority shows rank attachment of the genre by a user. namely, the order whose display priority are a genre which a user likes as a genre with a high display priority, and is high in the program cell display management table 25 of drawing 4 -- A, B, and C .. and the alphabet are attached. In whole display EPG mentioned later, it can be set up how many (which value, for example, B) the program cell is displayed about the program of the genre of the above display priority. For example, in the example of drawing 4, the display priority of the program cell is set as "A" to "variety." This means that a genre wants to give priority to the program cell of the program which is variety most (the 1st), and to display it on whole display EPG.

[0043]For example, the same display priority (the example of drawing 4 "D") can also be set up to several different genres like the "music" shown in drawing 4, and "news."
[0044]Since a maximum of three main genres and a maximum of nine subgenres can be set to one program to have mentioned above, two or more genres may be set as one program. In such a case, a display priority will be set up to the genre of representation. A user can set up the genre of this representation in an EPG screen etc. When a user does not set up the genre of representation, in the example of drawing 3, the genre of the main 1 is automatically set up as a genre of representation, for example.
[0045]The display flag shown in drawing 4 shows how many the program cell of a program is displayed by the display style corresponding to the genre to the genre of the above display priority. For example, in the example of drawing 4, although the display flag of the display priority of A, B, and C is "1", this means displaying the program cell of the program to the genre of the display priority of A-C by the display style corresponding to the genre.
[0046]The shape of a program cell, a pattern, colors, and those combination are included in the display style of the program cell set up for every genre of a program. By drawing 4, this display style shows the example which is color. That is, in the example of drawing 4, the color of the program cell is set up to each genre. For example, the color of the program cell is set as "red" to "variety." This means what a genre displays on whole display EPG which makes red color of the program cell of the program which is variety, and mentions it later. For example, the same display style (the example of drawing 4 "red") can also be set up to several different genres like the "variety" shown in drawing 4, and "anime."
[0047]Next, an EPG display screen is explained. Drawing 5 is an example of a fundamental EPG display screen. The EPG display screen shown in drawing 5 shows the race card of two or more channels day by day (every day of the week), and calls this below "day-of-the-week EPG." Day-of-the-week EPG30 is displayed by pushing the below-mentioned "EPG key" 91 of the remote control 12.
[0048]The present time is displayed on the topmost part of day-of-the-week EPG30. Day-of-the-week EPG30 has a race card for [from that day to the same day of the week of the next week] eight days like a graphic display. If the race card about all the channels is prepared for every day of the week and a user specifies the day of choice with the day-of-the-week tab 34, the race card of the day will be displayed. Whenever it pushes the below-mentioned "day-of-the-week change key" 92 of the remote control 12 once, a race card changes to the thing of the next day of the week, and

after resulting to the race card of seven days after, it returns to today's race card.
[0049]A race card is displayed in the race card display area 32, and calls each unit divided by the frame the program cell 31. The time zone display area 29 is located in the left-hand side of the race card display area 32. The example of drawing 5 shows the example as which the race card of the time zone from 7:00 p.m. on Sat., May 13 to 10:00 was displayed. In each program cell 31, the title of the program broadcast in the time zone displayed on the time zone display area 29, the outline of a program, etc. are displayed. The channel is shown in the upper part of the race card display area 32 by the transverse direction.
[0050]The continuous mark 36 is displayed in a certain program cell 31. Continuing the continuous mark 36 to the time base direction which it cannot display in the present race card display area 32 since the program has long time, and a mark shows is shown. The scroll mark 28 shows that a display screen can scroll in the direction pointed out by the mark 28 concerned. The favorite genre icon 37 is displayed in a certain program cell 31. The favorite genre icon 37 means that favorite registration of the genre of the program is carried out. If favorite registration is carried out, the display priority of the genre will be set as "A." A display priority is displayed instead of the favorite genre icon 37, and it may be made for display priorities other than "A", for example, a display priority, to display in the program cell 31 also in "B" and "C."
[0051]The highlighted part shown with the cursor 33 shows the program chosen by the user now. The summary information about the program chosen now is displayed in the summary information column 35 of the drawing 5 upper part. This summary information is carried out based on all station SI in each above-mentioned TS, and is generated.
[0052]Drawing 6 is an example of the display screen of whole display EPG which is a characterizing portion of this invention. Whole display EPG40 shown in drawing 6 is displayed by pushing the below-mentioned "whole display key" 95 of the remote control 12. Also in whole display EPG40, there is time zone display area 42 in the left-hand side of the race card display area 41 like day-of-the-week EPG30. The example of drawing 6 shows the example as which the race card of the time zone from 5:00 p.m. on Sat., May 13 to 5:00 a.m. of the next day was displayed. The channel display area 43 is located in the upper part of the race card display area 41. The range (49 copies of numerals) surrounded with the dashed line in the race card display area 41 of whole display EPG40 supports the display rectangle of the race card display area 32 of day-of-the-week EPG30. Program cells other than the range (49 copies of numerals) surrounded with the dashed line are shown in time (1 hour) of the same

length for convenience. Thus, the display rectangle of the race card display area 41 of whole display EPG40 is large substantially from the display rectangle of the race card display area 32 of day-of-the-week EPG30. Thereby, more program cells 44 can be displayed on 1 screen.

[0053]And although the program cell 44 of the program corresponding to each broadcasting-hours belt is displayed on the race card display area 41 like day-of-the-week EPG30, in this program cell 44, information, including the title of a program, the outline of a program, etc., is not displayed. These program cells 44 are displayed based on the display priority, display flag, and display style which are managed with the program cell display management table 25 mentioned above. For example, although whole display EPG40 shown in drawing 6 is displayed based on the program cell display management table 25 shown in drawing 4, the program cell 44 of the program of the genre to display priority A-C whose display flag is "1" is displayed by the display style corresponding to the genre. The display priority shown in 45 copies of numerals shows how many the program cell 44 of a program is displayed by the display style of the genre to the genre of the above (example of drawing 6 more than "C") display priority, and corresponds to the display flag in the program cell display management table 25.

[0054]In the example of drawing 6, in the display style managed with the program cell display management table 25, the program cell 44 of the program of the genre of the display priority (D, E, F ...) whose display flag is not "1" is not displayed, but it is white and the mask display is carried out. Mask displays may be black, a transparent color (the image of a program is transparent and is in sight), and a color in which others are not conspicuous. It may be made for a display flag not to display program cell 44 the very thing about the program of the genre of the display priority (D, E, F ...) which is not "1."

[0055]The program cell 44 currently displayed in red by the example of drawing 6 corresponds with the program cell 31 which has the favorite genre icon 37 on day-of-the-week EPG30 screen.

[0056]Also in whole display EPG40, the program cell 44 can be chosen with the cursor 46. It pops up and the selected program cell 44 is displayed, as shown in drawing 6. The view as popup of the information-display screen 47 (henceforth "the sub-screen 47") which displays the information about the selected program cell 44 is carried out on whole display EPG40 screen. In this sub-screen 47, the information, including the title of a program, the outline of a program, etc., corresponding to the selected program cell 44 is displayed. Thereby, the user can check the program information

which cannot be checked in the program cell 44 in the sub-screen 47. The sub-screen 47 is displayed by the display style relevant to the display style of the selected program cell 44. For example, when the selected program cell 44 is displayed in red, the background of the sub-screen 47 corresponding to this is also displayed in red. The scroll mark 28 shows that a display screen can scroll like day-of-the-week EPG30 in the direction pointed out by the mark 28 concerned.

[0057]On whole display EPG40 screen, statistics of the program which has a predetermined attribute in the certain area specified by a user can be taken. A display priority, a genre, a performer, etc. are contained in a predetermined attribute. As for drawing 7, a display priority shows an example in case statistics of the program (program of the genre by which favorite registration was carried out) of the genre of "A" are taken. In the example of drawing 7, this certain area is shown by the indication frame 50, and is equivalent to the display rectangle of the race card display area 32 in day-of-the-week EPG30. In the example of drawing 7, as for the statistic results of the program of the genre of "A", i.e., the statistic results of the number of the red program cells 44, the display priority is displayed in the information-display screen 51 which popped up. A user can also set up the size of this certain area arbitrarily.

[0058]On whole display EPG40 screen, the certain area which fulfills predetermined conditions can be searched about a certain attribute. Drawing 8 shows an example in case a display priority searches the certain area which has five or more programs of programs of the genre of "A." In the example of drawing 8, the searched certain area is shown by the indication frame 52, and it is displayed in the information-display screen 53 where search results popped up. The size of this certain area may also be constituted so that a user may set up arbitrarily.

[0059]Next, the remote control 12 is explained. Drawing 9 shows the appearance of the remote control 12 used with the digital receiver 1 of this invention. The cursor [in / the cursor control keys 81-84 are mostly arranged in the center, and / day-of-the-week EPG30 screen] 33 of the remote control 12, the cursor 46 in whole display EPG40 screen, etc. can be moved.

[0060]For example, in the displaying condition of day-of-the-week EPG30 screen, if the left-arrow key 81 is pressed, the cursor 33 will move to a program cell on the left, and if the rightward key 83 is pressed, the cursor 33 will move to a program cell on the right. If the above key 82 is pressed, the cursor 33 will move upward, and if the down key 84 is pressed, the cursor 33 will move downward.

[0061]However, the cursor control keys 81-84 are operated, and selection of a program is not yet become final and conclusive on processing of the receiver 1 in the

state to which the cursor 33 in day-of-the-week EPG30 screen and the cursor 46 in whole display EPG40 screen were moved. After the cursor 33 and the cursor 46 move, selection of a program is become final and conclusive by pressing the decision key 80.

[0062]For example, the cursor 33 on day-of-the-week EPG30 screen, and the cursor 46 on whole display EPG40 screen by the cursor control keys 81-84. If it is made to move to the program cell broadcast now and the decision key 80 is pressed, the receiver 1 is switched to the channel of the program, and the picture and sound of the program will be displayed 22, and it will output them to the loudspeaker 23. A program recording screen appears with the picture of a program on a screen by pressing this decision key 80. That program can be recorded by performing operation which this program recording screen directs. In this way, the user can view, listen to it or record the program.

[0063]If the cursor 33 on day-of-the-week EPG30 screen and the cursor 46 on whole display EPG40 screen will be moved to the program cell 31 of a broadcast schedule by the cursor control keys 81-84 in the future and the decision key 80 is pressed, the request-to-print-out-files screen of the program will appear. By performing operation which a request-to-print-out-files screen directs, the viewing-and-listening request to print out files of the program can be made, or reservation of picture recording can be carried out.

[0064]"EPG key" 91 are a key for displaying the usual day-of-the-week EPG screen among the function keys provided in the upper part of the remote control 12. That is, if the EPG key 91 is pressed in the state where it is viewing and listening to the usual program, the screen of the display 22 will switch to day-of-the-week EPG30 screen as shown in drawing 5 from a program screen. If the EPG key 91 is pressed in the state where day-of-the-week EPG30 screen is displayed, it will return to the original program screen. "Day-of-the-week change key" 92 is in the right of the EPG key 91, and it is used in order to change the day of the week of a race card on display. In the state where "favorite genre register key" 93 is under the EPG key 91, and day-of-the-week EPG30 screen is displayed. A push on the favorite genre register key 93 will set the display priority of the genre of the favorite genre registration 25, i.e., a program cell display management table, concerned as "A" for the genre of the program selected with the cursor 33. Thereby, the favorite genre icon 37 is displayed on the program cell 31 of all the programs corresponding to the genre concerned in day-of-the-week EPG. If the favorite genre register key 93 is pressed, a display priority may be made into how many, or a selection picture may be displayed, and it may constitute so that display priorities other than "A" can be set up.

[0065]the state where "display priority and gestalt set key" 94 is in the right-hand of the favorite genre register key 93, and it is viewing and listening to the usual program -- or, In the state where various EPG screens are displayed, if a display priority and the gestalt set key 94 are pressed, it will switch to Screen 55 which sets up the display priority and display style of a program cell, for example, a display priority and a display style setting screen as shown in drawing 10. In this display priority and display style setting screen 55, a display priority and a display style can be set up for every genre. Setting out of a display priority and a display style is performed on the setting field 57 provided for every genre on the display priority and the display style setting screen 55. The contents set up here are reflected in the program cell display management table 25. It is shown that the mark 58 shown in the lower part of a display priority and the display style setting screen 55 has a genre which is not displayed on the present screen. By moving the cursor 56 downward, the genre which is not displayed on the screen scrolls and is displayed. A display priority and the display style setting screen 55 are superimposed on a day-of-the-week EPG screen and a whole display EPG screen, and it may be made to display it.

[0066]It is "whole display key" 95 and is in the state where it is viewing and listening to the usual program, and if it presses the whole display key 95 that it is under the favorite genre register key 93, it will switch to a whole display EPG screen, for example, whole display EPG40 screen as shown in drawing 6. If the whole display key 95 is pressed in the state where the whole display EPG screen is displayed, it will return to the original program screen.

[0067]"Statistics key" 96 is in the right-hand of the whole display key 95, and in the state where the whole display EPG screen is displayed, if the statistics key 96 is pressed, the indication frame 50 as shown in the whole drawing 7 display EPG40 screen will appear. This indication frame 50 will switch to the statistics setting screen 60 as shown in drawing 11, if you can make it move by the cursor control keys 81-84, a user makes it move to a desired field and the decision key 80 is pressed. In this statistics setting screen 60, it can be set up of what attribute statistics are taken about the program in the indication frame 50 shown in drawing 7. The statistics (refer to drawing 7) mentioned above with the attribute set up in this statistics setting screen 60 are performed. The statistics setting screen 60 is superimposed on a whole display EPG screen, and it may be made to display it.

[0068]"Search key" 97 is under the whole display key 95, and in the state where the whole display EPG screen is displayed, if search-97 is pushed, it will switch to the search setting screen 61 as shown in drawing 13. It can be set up whether the certain

area which fulfills the predetermined condition of what attribute refers to this search setting screen 61. Search (refer to drawing 8) mentioned above with the attribute set up in this search setting screen 61 is performed. The search setting screen 61 is superimposed on a whole display EPG screen, and it may be made to display it.

[0069]"Detailed information key" 98 is in the right-hand of the search key 97, and in the state where the day-of-the-week EPG screen or the whole display EPG screen is displayed, if the detailed information key 98 is pressed, the detailed information screen of the program chosen with the cursor 33 or the cursor 46 will be displayed. The detailed information of the program selected with the cursor 33 or the cursor 46 is displayed on a detailed information screen (not shown). With for example, the information displayed in the summary information column 35 of the upper part of a day-of-the-week EPG screen and the information displayed in the sub-screen 47 of a whole display EPG screen. The detailed contents (for example, outline) of the program, the information on whether it is a program of limited broadcast, the information that shows that it cannot view and listen by conditions of contract, etc. are displayed. This program detailed information is carried out based on each office SI in each above-mentioned TS, and is generated. The detailed information screen is matched with all the program cells displayed on each EPG by 1 to 1, and is provided for every program.

[0070]"ESC key" 99 under the search key 97 are used in order to return from an EPG screen to a program screen. "BACK key" 100 in the right-hand of ESC key 99 are used in order to cancel the directions inputted previously and to return to the state before directions.

[0071]Other keys in the remote control 12 of drawing 10 are related with reception of usual TV, and since it does not have direct relation in particular, the explanation is abbreviated to this invention.

[0072]Next, operation of the satellite digital broadcast receiver 1 concerning this embodiment is explained with reference to the flow chart of drawing 16 thru/or drawing 23. Processing explained below is performed by controlling RAM16, the display processor 9, etc., when CPU17 shown mainly in drawing 1 executes the predetermined processing program memorized by ROM15.

[0073]Drawing 16 is a main routine which shows processing of CPU17 in a program viewing-and-listening state. Now, a user controls the receiver 1, receives the channel of hope, and suppose that it is in the state where it is viewing and listening to a program (Step S1). First, CPU17 extracts all station SI from TS of the channel under reception, and acquires the date data contained there (Step S2). In this system,

management of date data is performed by the broadcasting station side which transmits a broadcast wave, and the present date data is included into all station SI. Therefore, CPU17 acquires date data from a transmission wave. Next, CPU17 calculates the day of the week of viewing-and-listening that day from the acquired date data (Step S3). Usually, since the information on a day of the week is not included in the date data from a satellite, it specifies a day of the week as it from date data by predetermined calendar calculation. Next, based on the data of the time specified in this way and a day of the week, the data for EPG displays for eight days is acquired from that day as data of the day-of-the-week cell of day-of-the-week EPG (step S4).

[0074]Next, when the EPG key 91 is pressed by the user, CPU17 detects this (Step S5) and shifts to day-of-the-week EPG display processing (Step S6). When a display priority and the gestalt set key 94 are pressed, CPU17 detects this (Step S7) and shifts to a display priority and gestalt setting processing (Step S8). When the whole display key 95 is pressed, CPU17 detects this (step S9) and shifts to whole display EPG display processing (Step S10).

[0075]Drawing 17 is a subroutine which shows display processing of day-of-the-week EPG of Step S6 in drawing 16. In display processing of day-of-the-week EPG, the display day of the week of day-of-the-week EPG which should be displayed is first set as that day, and "today's" day-of-the-week tab 34 is made into a selective state. Next, CPU17 sets up the time-axis of day-of-the-week EPG which should be displayed (Step S21). This is performed by setting the display destination head time shown in the time zone display area 29 as the head of unit time at which the present time is contained.

[0076]Next, CPU17 sets up the channel axis of day-of-the-week EPG which should be displayed (Step S22). That is, a user maintains the channel axis to which it was viewing and listening when the EPG key 91 was pressed. Next, CPU17 determines the range displayed as a race card, and acquires the EPG display data corresponding to the range from SI (Step S23). For example, in m hours and the direction of a channel axis, supposing the size of the race card which can be displayed at once by setting out of a receiver is a part for n channel, in a time base direction, A part for n channel is determined as a display rectangle from m hours and the display destination head channel of the channel axis set up at Step S22, and the EPG display data corresponding to the range is acquired from the display destination head time set up at Step S21. Next, CPU17 specifies the program of the genre by which favorite registration was carried out among the programs in the display rectangle determined

at Step S23 with reference to the program cell display management table 25 (Step S24).

[0077]In this way, while using the obtained data for EPG displays, and CPU17 and the display processor 9 constituting a race card and displaying day-of-the-week EPG on the display 22, The favorite genre icon 37 is displayed in the program cell of the program specified at Step S24 (Step S25). In this way, day-of-the-week EPG30 as shown in drawing 5 is displayed. If a user presses the cursor control keys 81-84 by the displaying condition of this day-of-the-week EPG30, CPU17 will detect this (Step S26) and will move the cursor 33 in the direction according to a cursor control key (Step S27). And when the favorite genre register key 93 is pressed by the user. CPU17 detects this (Step S28), sets favorite registration, i.e., the display priority of the genre concerned, as "A", and memorizes the genre of the program of the program cell 31 chosen with the cursor 33 to the program cell display management table 25 (Step S29). In Step S30 of drawing 17, processing corresponding to the various key operation of the remote control 12 is performed. For example, by the displaying condition of day-of-the-week EPG30, when the detailed information key 98 is pressed, the detailed information screen of the program chosen with the cursor 33 is displayed. In the displaying condition of day-of-the-week EPG30, viewing-and-listening request to print out files of a program and reservation of picture recording can be performed as mentioned above. Again, when the EPG key 91 is pressed, it returns to processing of (Step S31) and drawing 16, and it will be in a program viewing-and-listening state.

[0078]Drawing 18 is a subroutine which shows the display priority and gestalt setting processing of Step S8 in drawing 16. In a display priority and gestalt setting processing, a display priority and a display style setting screen as shown in drawing 10 are displayed first (Step S41). If the cursor control keys 81-84 are pressed by the displaying condition of this display priority and display style setting screen 55, CPU17 will detect this (Step S42) and will move the cursor 56 in the direction according to a cursor control key (Step S43). If a user chooses the desired setting field 57 with the cursor 56 and does the depression of the decision key 80 by this, CPU17 will detect this (Step S44) and will change this setting field 57 into the state which can be inputted (Step S45). In this state, if a user does the depression of the desired numerical keypad 85, CPU17 will detect this (Step S46) and he will input the display priority corresponding to the pushed numerical keypad 85, or a display style into the setting field 57 (Step S47). (display)

[0079]For example, the correspondence relation of a display priority and a numerical value as shown in 59 copies of numerals of drawing 10, And a display priority or a

display style is inputted into the setting field 57 by memorizing beforehand the correspondence relation between a display style and a numerical value to RAM16, and pushing the numerical keypad 85 of the numerical value corresponding to a display priority or a display style (display).

[0080]In this way, if the input of a display priority and a display style is finished and the depression of the decision key is carried out about all the genres, CPU17 detects this (Step S48), registers the contents inputted into the setting field 57 into the program cell display management table 25 memorized by RAM16 (Step S49), eliminates a display priority and the display style setting screen 55 from on a screen, returns to processing of drawing 16, and will be in a program viewing-and-listening state. A user inputs not all the display priorities and display styles of genres one by one, The display priority and display style which are recommended for every genre are beforehand registered into the program cell display management table 25, and a user may be made to change a display priority and a display style only about a genre to change in a display priority and the display style setting screen 55.

[0081]Drawing 19 is a subroutine which shows the display EPG display processing by the whole step S10 in drawing 16. Also by whole display EPG display processing, the display day of the week of whole display EPG which should be displayed is first set as that day, and "today's" day-of-the-week tab is made into a selective state. Next, CPU17 sets up the time-axis of whole display EPG which should be displayed (Step S51).

[0082]Next, CPU17 sets up the channel axis of whole display EPG which should be displayed (Step S52). That is, a user maintains the channel axis to which it was viewing and listening when the whole display key 95 was pressed. Next, CPU17 determines the range displayed as a race card, and acquires the EPG display data corresponding to the range from SI (Step S53). Although the processing (Steps S51-S53) so far is the same as the processing at the time of displaying a day-of-the-week EPG screen, the whole display EPG display processing of the range displayed as a race card is substantially larger substantially as mentioned above.

[0083]Next, CPU17 and the display processor 9 using the data for EPG displays obtained in this way, and referring to the program cell display management table 25, they constitute a race card and display whole display EPG on the display 22 (Step S54). That is, a program cell is displayed on whole display EPG in the display priority corresponding to the genre of each program included within limits displayed as a race card, a display flag, and a display style. In this way, whole display EPG40 as shown in drawing 6 is displayed. Although displayed from 5:00 p.m., it may be made to display

from 7:00 p.m. in the example of drawing 6 in accordance with day-of-the-week EPG30 shown in drawing 5. If a user presses the cursor control keys 81-84 by the displaying condition of this whole display EPG40, CPU17 will detect this (Step S55) and will move the cursor 33 in the direction according to a cursor control key (Step S56). About the program cell 46 with the selected cursor 33, it is a display style relevant to the display style of the program cell 46, the sub-screen 47 is displayed, and the information on a program is displayed in the screen (Step S57). And when the statistics key 96 is pressed by the user, CPU17 detects this (Step S58), and passes and shifts to a statistical work (Step S59). When the search key 97 is pressed, CPU17 detects this (Step S60), and passes and shifts to retrieval processing (Step S61). In Step S62 of drawing 19, processing corresponding to the various key operation of the remote control 12 is performed like Step S30 of drawing 17. While the display priority corresponding to the figure is displayed on 45 copies of numerals shown in drawing 6 and is reflected in the display flag of the program cell display management table 25 by carrying out the depression of the numerical keypad 85 at Step S62, The program cell 44 of the program of the genre beyond the display priority is displayed on whole display EPG40 by the display style of the genre. Again, when the whole display key 95 is pressed, it returns to processing of (Step S63) and drawing 16, and it will be in a program viewing-and-listening state.

[0084]Drawing 20 and drawing 21 are subroutines which show the statistical work of Step S59 in drawing 19. In a statistical work, as shown in drawing 7, the indication frame 50 in which the certain area which is the statistical target is shown is displayed on whole display EPG40 screen (Step S81). If a user presses the cursor control keys 81-84 by this displaying condition, CPU17 will detect this (Step S82) and will move the indication frame 50 in the direction according to a cursor control key (Step S83). When a user chooses a desired certain area with the indication frame 50 and presses the decision key 80 by this, CPU17, This is detected (Step S84), and the statistics setting screen 60 as shown in drawing 11 is replaced with whole display EPG40 screen, or it superimposes and displays on whole display EPG40 screen (Step S85).

[0085]Next, if a user presses the cursor control keys 82 and 84 on the statistics setting screen 60 shown in drawing 11, CPU17 will detect this (Step S86) and will move the cursor 70 in the direction according to a cursor control key (Step S87). If a user chooses the attribute (the example of drawing 11 display priority) which wants to take statistics with the cursor 70 and presses the decision key 80 by this, CPU17 will detect this (Step S88) and will memorize the selected attribute to RAM16 (Step S89). And CPU17 switches the display information of the statistics setting screen 60, and

the statistics setting screen 60 shown in drawing 12 is displayed (Step S90).

[0086]Next, if a user presses the cursor control keys 82 and 84 on the statistics setting screen 60 shown in drawing 12 as shown in drawing 21, CPU17 will detect this (Step S91) and will move the cursor 70 in the direction according to a cursor control key (Step S92). When a user chooses the item (a display priority is "A" at the example of drawing 12) which wants to take statistics with the cursor 70 and presses the decision key 80 by this, CPU17, While detecting this (Step S93) and memorizing the item of the selected attribute to RAM16, the statistics setting screen 60 is eliminated from on a screen, and is returned to whole display EPG40 displaying condition (Step S94). And about the program in the certain area selected with the indication frame 50, CPU17 takes statistics of the item of the selected attribute (Step S95), and displays this result in the information-display screen 51 (Step S96). in this way -- for example, -- as shown in drawing 7, statistics of the program of the genre whose display priority is "A" are taken -- such a program -- the No. 7 set -- it indicates that it is in the information-display screen 51. Again, when the statistics key 95 is pressed, it returns to processing of drawing 19.

[0087]Drawing 22 is a subroutine which shows the retrieval processing of Step S61 in drawing 19. In retrieval processing, first, it replaces with whole display EPG40 screen, or on whole display EPG40 screen, it is superimposed on the search setting screen 61 as shown in drawing 13, and it is displayed (Step S101).

[0088]Next, if a user presses the cursor control keys 82 and 84 on the search setting screen 61 shown in drawing 13, CPU17 will detect this (Step S102) and will move the cursor 71 in the direction according to a cursor control key (Step S103). If a user chooses an attribute (the example of drawing 13 display priority) to search with the cursor 71 and presses the decision key 80 by this, CPU17 will detect this (Step S104) and will memorize the selected attribute to RAM16 (Step S105). And CPU17 switches the display information of the search setting screen 61, and the search setting screen 61 shown in drawing 13 is displayed (Step S106).

[0089]Next, if a user presses the cursor control keys 81-84 on the search setting screen 61 shown in drawing 14, CPU17 will detect this (Step S107) and will move the cursor 71 in the direction according to a cursor control key (Step S108). This chooses the item (at the example of drawing 14, a display priority is "A") of the attribute which a user wants to search with the cursor 71, and a search condition (the example of drawing 14 five or more programs) is chosen, If the decision key 80 is pressed, CPU17 will detect this (Step S109) and will memorize the selected item and search condition of an attribute to RAM16 (Step S110).

[0090]And as shown in drawing 23, the search setting screen 61 is eliminated from on a screen, and is returned to whole display EPG40 displaying condition (Step S111). Next, CPU17 displays the search results in the information-display screen 53 while it searches the certain area which fulfills the selected search condition (Step S112) and shows the certain area with the indication frame 52 about the item of the selected attribute (Step S113). in this way, such [as shown in drawing 8 / the program of the genre whose display priority is "A" / the certain area] a program in which five or more programs of a certain certain area are shown by the indication frame 52 -- the No. 8 set -- it indicates that it is in the information-display screen 53.

[0091]Next, when the decision key 80 is again pressed by this displaying condition, it is except the certain area which CPU17 detected this (Step S114) and was searched with Step S109, While the certain area filled with the above-mentioned search condition is searched (jump function of the indication frame 52) and the indication frame 52 shows the certain area, the search results are displayed in the information-display screen 53. That is, the depression of the decision key 80 for the second time means receiving specification of movement of a certain area. In this way, as shown in drawing 15, the indication frame 52 and the information-display screen 53 will move to the certain area searched next. And whenever it presses the decision key 80 also after this, the indication frame 52 and the information-display screen 53 will move. Again, when the search key 96 is pressed, it returns to processing of (Step S115) and drawing 19.

[0092]As explained above, in whole display EPG concerning this embodiment. Since the number of the program cells displayed in 1 screen can be increased more nearly substantially than usual day-of-the-week EPG etc. and a display style can be made to change with genres of the program corresponding to each program cell, Out of a broad display rectangle, the user can glance and can grasp the broadcasting-hours belt and channel which a specific genre concentrates.

[0093]Since the user can perform attachment with a rank of a favorite genre by setting up a display priority and only the program of the genre more than the rank specified by a user enabled it to display a program cell by the display style specified by a user, The user can know promptly the broadcasting-hours belt and channel which the program of a favorite genre concentrates. The program cell of the program can be prevented from being conspicuous on whole display EPG by making the display priority of the program of an uninterested genre low. Thereby, a race card peculiar to a user is generable.

[0094]In the above-mentioned embodiment, although the user enabled it to set up

arbitrarily, a display priority may be constituted according to the operation history by a user so that it may set up automatically. For example, the viewing history of the program by a user, a recording history, viewing-and-listening reservation histories, and a reservation-of-picture-recording history are memorized to RAM16, and according to those frequency, it may constitute so that a display priority may be set up.

[0095]In the retrieval processing explained by above-mentioned drawing 22, the certain area which has a program cell of a program with high frequency by the operation history by a user, for example, a viewing history, is searched, It may constitute, as the indication frame 52 and the information-display screen 53 show, and further, it may constitute so that the jump function of the indication frame 52 can be performed.

[0096]In whole display EPG, a favorite channel and user enable it to set up a favorite time zone, and a user may constitute so that the race card of only the channel set as a favorite and a time zone may be displayed.

[0097]Only the race card field where the program of the number more than fixed exists is displayed to a certain channel and time zone, and it may constitute so that a user can set up the number of this program arbitrarily.

[0098]By investigating the past viewing history, it may judge and a high channel, a time zone, etc. of viewing-and-listening frequency of a user may be put in a database, and it may constitute so that only the field which the program assumed that a user is fond concentrates may be displayed based on these results of an investigation.

[0099]In this embodiment, although explained taking the case of the program of satellite broadcasting, it is not limited to this but can apply, the system which broadcasts a program with an exclusive cable, and a public line, for example, the system which broadcasts a program using the Internet. Although the EPG screen was displayed on the TV display, it is not limited to this but you may make it display on a personal computer etc. in this embodiment.

[0100]

[Effect of the Invention]As explained above, according to this invention, the range which can be made to display many program cells by a 1 screen top, and the program of the genre of liking [a user] concentrates can be known promptly.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a block diagram showing the composition of the satellite digital broadcast receiver by the embodiment of this invention.

[Drawing 2]It is a figure showing the data transmission method by digital broadcasting.

[Drawing 3]It is a figure showing the example of information included in SI memorized by RAM16.

[Drawing 4]It is a figure showing the example of information managed with a program cell display management table.

[Drawing 5]It is a figure showing the display example of a day-of-the-week EPG screen.

[Drawing 6]It is a figure showing the display example of a whole display EPG screen.

[Drawing 7]A display priority is a figure showing an example in case statistics of the program of the genre of "A" are taken.

[Drawing 8]It is a figure showing an example in the case of searching the certain area where a display priority has five or more programs of programs of the genre of "A."

[Drawing 9]It is a figure showing the appearance of the remote control used with the receiver of drawing 1.

[Drawing 10]It is a figure showing the display example of a display priority and a display style setting screen.

[Drawing 11]It is a figure showing the display example of a statistics setting screen.

[Drawing 12]It is a figure showing the display example of a statistics setting screen.

[Drawing 13]It is a figure showing the display example of a search setting screen.
[Drawing 14]It is a figure showing the display example of a search setting screen.
[Drawing 15]In drawing 8, it is a figure showing an example in the case of searching another certain area again.
[Drawing 16]It is a flow chart which shows processing of CPU17 in a program viewing-and-listening state.
[Drawing 17]It is a flow chart which shows display processing of day-of-the-week EPG of Step S6 in drawing 16.
[Drawing 18]It is a flow chart which shows the display priority and gestalt setting processing of Step S8 in drawing 16.
[Drawing 19]It is a flow chart which shows the display EPG display processing by the whole step S10 in drawing 16.
[Drawing 20]It is a flow chart which shows the statistical work of Step S59 in drawing 19.
[Drawing 21]It is a flow chart which shows the statistical work of Step S59 in drawing 19.
[Drawing 22]It is a flow chart which shows the retrieval processing of Step S61 in drawing 19.
[Drawing 23]It is a flow chart which shows the retrieval processing of Step S61 in drawing 19.
[Description of Notations]
1 -- Digital broadcasting receiver
2 -- Bus
3 -- Antenna
4 -- Tuner
5 -- Recovery treating part
6 -- Demultiplexer
7 -- Limited reception treating part
8 -- Video decoder
9 -- Display processor
10 -- Audio decoder
11 -- Voice processing part
12 -- Remote control
13 -- Interface
14 -- Flash memory
15 -- ROM

16 -- RAM
17 -- CPU
18 -- Modem
19 -- Public line
20 -- Descrambler
21 -- IC card
22 -- Display
23 -- Loudspeaker
24 -- Mass recorder
24a -- VTR devices
24 b--DVD-RW device
24 c--HDD recorder